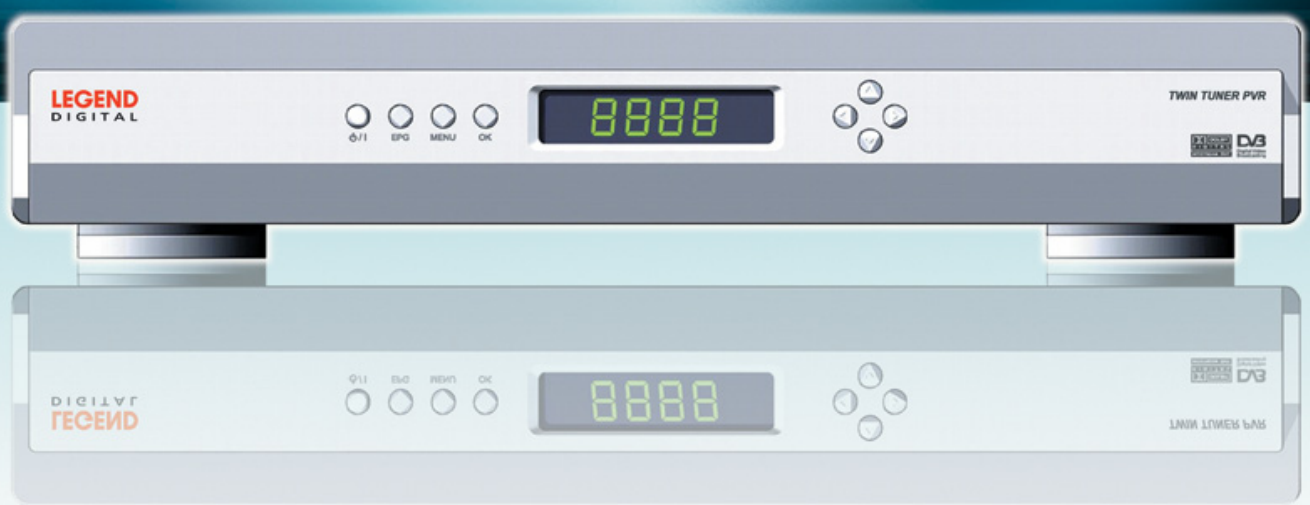
LEGEND
DIGITAL

User's Manual

TWIN TUNER PVR
LPVRC



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DVB Digital Video Broadcasting **Trade Mark of the DVB Digital Video Broadcasting Project**

SAFETY INSTRUCTIONS

WARNING

Failing to heed the instructions provided on this page could result in serious damage to your health or damage equipment or other such property.

- Always follow these instructions to avoid the risk of injury to yourself or damage to your equipment.
- Unplug the power cord from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the receiver.
- Do not use accessories or attachments not recommended by the manufacturer, as they may damage the equipment and said damage is not covered by the warranty.
- Do not operate the receiver in high-humidity areas, or expose it to water or moisture.
- Do not place the receiver on an unstable cart, stand, tripod, bracket, or table. The receiver may fall, causing serious personal injury and damage to the receiver.
- Do not block or cover slots and openings in the receiver. These are provided for ventilation and protection from overheating. Never place the receiver near or over a radiator or heat register. Do not place the receiver in an enclosure such as a cabinet without proper ventilation.
- Do not stack the receiver on top of or below other electronic devices. They should be at least 10 cm apart.
- Operate the receiver using only the type of power source indicated on the marking label. Unplug the receiver power cord by gripping the plug, not the cord.
- Route power supply cords so that they will not be pinched by items placed on or against them. Connect the power cord in the power outlets securely. Unplug the cord by grasping the plug, not the cord.
- Use an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the receiver is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the receiver and the antenna.
- Do not attempt to service the receiver yourself, as opening or removing covers may expose you to dangerous voltage, and will void the warranty. Refer all servicing to authorized service personnel.
- Unplug the receiver from the wall outlet carefully and refer servicing to authorized service personnel whenever the following occurs:
  - The power cord is damaged;
  - Liquid has been spilled, or objects have fallen into the receiver;
  - The receiver has been exposed to rain or water;
  - The receiver has been dropped or the chassis has been damaged;
  - The receiver exhibits a distinct change in performance.

SET-TOP BOX PART

- MPEG-II Video(MP@ML)
- MPEG-I Audio Layer 1, Layer 2
- MPEG-II Digital & Fully DVB Compliant
- LD Quality Video, CD Quality Audio
- European DVB-T standard
- Twin Tuner : one channel watching while one channel recording
- On-Screen Graphics menu with 256 Colors Full-Resolution
- User friendly OSG menu with full function
- Plug & Play Installation
- 4-digit 7-segment LED on the front panel displays channel information
- Displays local time on front panel, when it is on stand-by mode
- RS-232C port for additional information service and update of the receiver control software
- 64-Steps Volume control
- Favorite channel function
- IR remote control
- Last channel memory function
- Variable aspect ratio
- Maturity Rating control / Installation lock / Receiver lock
- EPG for on screen channel information
- Teletext supported by OSD & TV set
- Subtitle supported
- Total 2,000 channels programmable
- Dolby AC3 digital audio bitstream out supported through S/PDIF output (Coaxial/ Optical)

PVR PART

- PVR ready – Recommend 40/80/120G Hard Disk Drive named by Seagate, Maxtor, WDC
- Instant recording, Reserved recording Function
- PVR function with variety trick mode : FF, REW, Slow, Frame by Frame, Repeat, Jump, Index
- Time shifting function (PAUSE function for live signal)
- Random Access function while playback or time shifting
- Last play Function
- Play function while recording
- Permanent storing function of the time shifted files
- Time-shifting and Recording simultaneously.
- File management (Rename, Delete, Lock, Sort)
- MP3 function/ Photo Album.

Accessories

1. Remote Control Unit

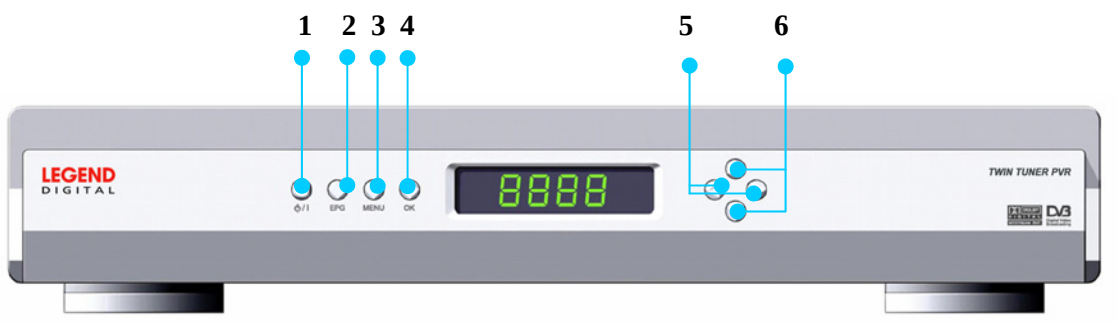
2. Batteries

3. USB Cable

4. Loopthrough Cable

5. User Manual

Front View



1. **On/ Stand-By**
   : Switch the receiver to On or Stand-by.

2. **EPG**
   : Go to the EPG menu.

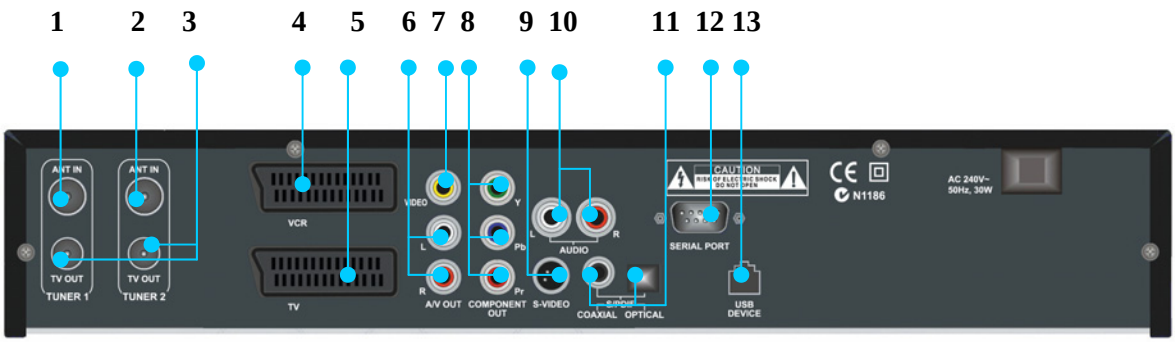
3. **MENU**
   : Get access to the installation menu..

4. **OK**
   : Give a confirmation or selection.

5. **Left/ Right or Volume Up/Down**
   : Navigate Left/ Right through the selectable options or Volume Up/ Down.

6. **Up/ Down or Channel Up/ Down**
   : Navigate Up/ Down through the selectable options or Channel Up/ Down.

Rear View



1. **ANT IN (TUNER 1)**

   : Connect to a terrestrial antenna to receive the digital broadcasts.

   In case of the loopthrough connection between the two tuners;

   Tuner 1 should be the master tuner to receive the signal from the antenna.

2. **ANT IN (TUNER 2)**

   : Use for the Loop-through cable.

3. **TV OUT**

   : Use for the Loop-through cable.

4. **VCR SCART**

   : Connect to a connector of the VCR through out the fully-featured SCART cable.

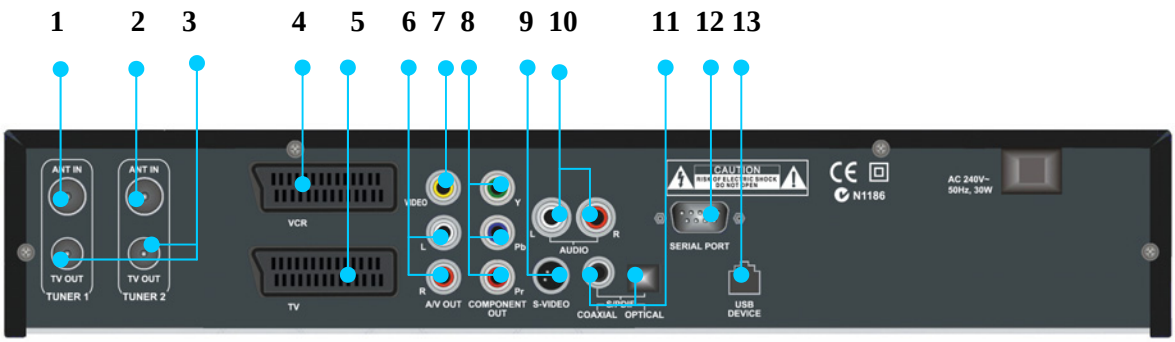
5. **TV SCART**

   : Connect this to a connector of the TV through out the fully-featured SCART cable.

6. **AUDIO RCA**

   : Connect to a Left/right stereo output sockets for television.

Rear View



7. **VIDEO RCA**

: Connect to a video signal output socket for television or AV receiver.

8. **Component VIDEO OUT**

: Connect to the component video sockets for television.

9. **S-VIDEO**

:Connects to a video signal output socket for Super-Video interface.

10. **AUDIO RCA**

: Connect to a Left/right stereo output sockets for the hi-fi system.

11. **S/PDIF**

: Connect to an audio output socket for Dolby digital audio signal for digital multi-channel amplifier.his to Dolby Digital compatible audio equipment through coaxial S/PDIF cable.

12. **SERIAL PORT**

: Connect to a serial communication port of a PC for software upgrade (if required).

13. **USB PORT**

: Connect this to the USB port of a PC for Music and Software download.

I. TV MODE - 1

ON/STAND-BY

NUMBER/ ALPHABET
Direct choice of TV / Radio channel and input a character by alphabetical keys.

.

MENU
Displays the main menu or return to the previous menu.

TV / RADIO
Switches between TV and Radio mode.

MUTE
Switches the sound ON/OFF.

RECALL
Return to the previously viewed channel.

EXIT
Returns to the current channel watching at any time or exit out of the submenu

OK/ CH LIST
It is used to select an item in the menu.
Displays the channel list on live signal status.

INFORMATION
Press Once: Information Banner
Press Twice: More information on the current and next program.

I. TV MODE - 2

ALT AUDIO
Select the audio language

PAGE UP/ DOWN
It is used to move up/down a page in a list.

VOL
Adjusting Volume or Move the Cursor Left/ Right.

EPG
Opens information on program.

FAV
Move to the FAV channel list.

ASPECT RATIO
Choose the Aspect Ratio for the TV screen.

SLEEP TIMER
Set the sleep timer between 15min and 180min with 15min interval.

TELETEXT
Shows a teletext.

SUBTITLE
Shows Subtitle menu to select the subtitle language.

CH
Switching Channels or Move the Cursor Up/ down.

GROUP (blue)
Move to the Group mode in the channel list.

II. PVR MODE

MARKER LIST
Shows the Index List in a play mode.

PVR
Move to the PVR list. Use RED button to switch the satus of the PVR list (Photo Album, MP3 list, Saved Programs).

RECORD
Enable the recording to start.

PLAY
Start to play a recorded file.

STOP
Return to the live signal.

FAST FORWARD
FAST REVERSE
2 - 8 skip rate.

JUMP FORWARD
JUMP REVERSE
Short press: Jump 15 secs forward or reverse to replay.
Long Press: Move to desired location.

MARKER
Use for the marker function in a recording or replaying mode.

RECORDING PAUSE
Stop the recording temporarily in a play-back mode.

INFO/ HELP MENU
- Press Once : Display the information banner.
- Press Twice : Display the Help menu.

1. TIME SHIFT
Make the time shifting record to start.
2. PAUSE
Make the picture freeze temporarily in a play mode.

SLOW FORWARD
SLOW REVERSE
Enable a recorded file to play with slow motion.

REPEAT A-B
Repeat the selected selection of the recorded file between A and B.

REPEAT
Repeat the selected file.

III. PHOTO ALBUM

PVR
Move to the PVR list. Use **RED** button to switch the satus of the PVR list (Photo Album, MP3 list, Saved Programs).

DIRECTION
Use for the direction key (Left/Right/Up/ Down) in Zoom In mode.

STOP
Return to the live signal.

ZOOM IN/ OUT
Make the current photo zoom in/ out.

OK/CH LIST
Display the Photo Album list when the selected photo is displayed. Show the selected photo in the Photo Album list.

INFO/ HELP MENU
- Press Once : Display the information banner.
- Press Twice : Display the Help menu.

PLAY
Start the Slide Show when the photo is displayed.

PAUSE
Stop Slide Show.

PREVIOUS
NEXT
Show the previous photo or next photo.

IV. MP3 MODE

PVR
Move to the PVR list. Use **RED** button to switch the satus of the PVR list (Photo Album, MP3 list, Saved Programs).

PLAY
Play the selected file.

STOP
Return to the live signal.

FAST FORWARD/ REVERSE
Move to a selected position forward/back.

PREVIOUS/NEXT
Play the previous file or next file.

OK/CH LIST
Plays the selected MP3 file from the list. Displays the MP3 list.

HELP MENU
Display the Help menu.

PAUSE
Makes the replay stop temporarily.

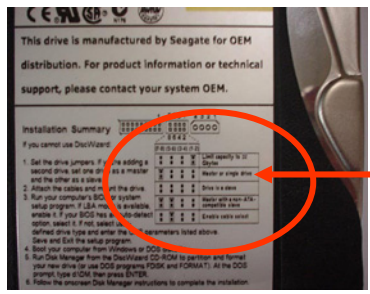
JUMP FORWARD
JUMP REVERSE
Jump 10 secs. forward or reverse to replay.

REPEAT A-B
Repeat the selected selection of the music file between A and B.

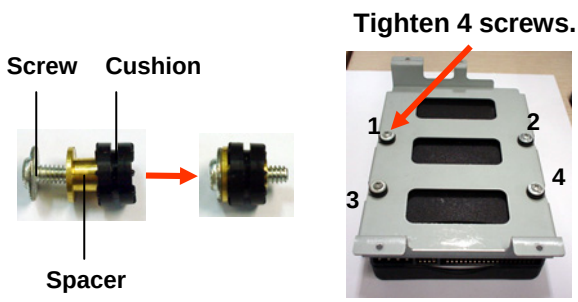
REPEAT
Repeat the selected file.

HOW TO FIX THE HARD DISK DRIVE ON THE RECEIVER

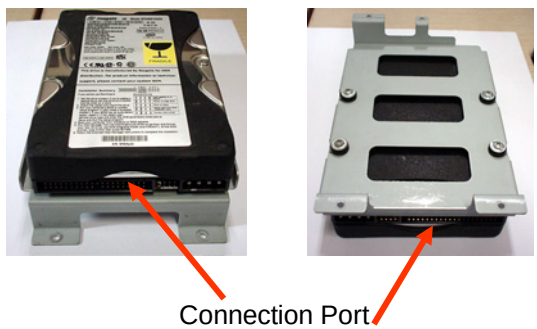
1. Set your HDD as a master. Please refer to the instructions of setting method on HDD.


This drive is manufactured by Seagate for OEM
distribution. For product information or technical
support, please contact your system OEM.
Installation Summary

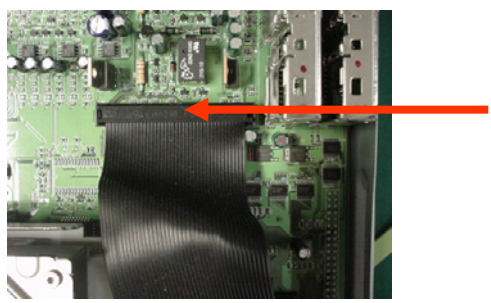
2. Tighten 4 screws combined with spacer and cushion on the bottom of the HDD bracket.



3. Make sure that the HDD location on the bracket is as right picture.

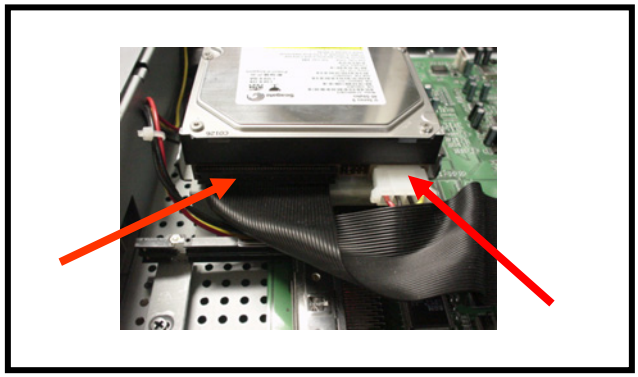


4. Connect the cable on the Main PCB.



5. Tighten 4 screws to connect the HDD bracket with the bottom chassis.

6. Connect the cable from Main PCB to the HDD. And Connect the cable from SMPS to the HDD.



This PVR ready receiver needs careful attention to the following cautions.

• Recommended to use **Hard disk Drive (80/120G) by Hitachi**.

• **Set the Hard Disk Drive as a Master, when you connect the HDD to the receiver.**

• **Before use the new HDD initially, you should format the HDD first. In case of that you format the HDD in the menu of the receiver, it may occur to lose any data in the HDD.**

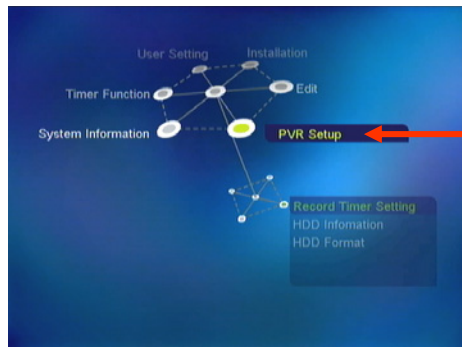
• **The HDD is not in a good performance for use, the PVR function of the receiver may not operate properly.**

• Pay attention not to make any electric interference between this receiver and other appliances such as PC.

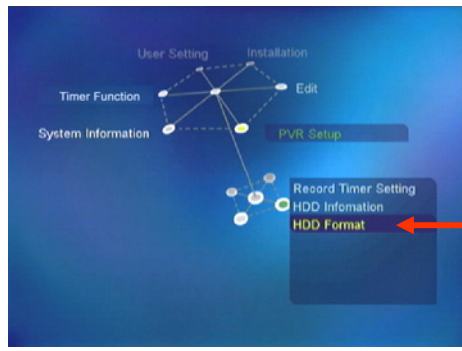
• All management for the warranty or the upgrade of the HDD shall be treated by the dealer from whom you purchased.

HOW TO FORMAT THE HARD DISK DRIVE

1. Press the **OK** key on [PVR Setup].



2. Press the **OK** key on [HDD Format].



3. Select [ON] on [HDD Format].

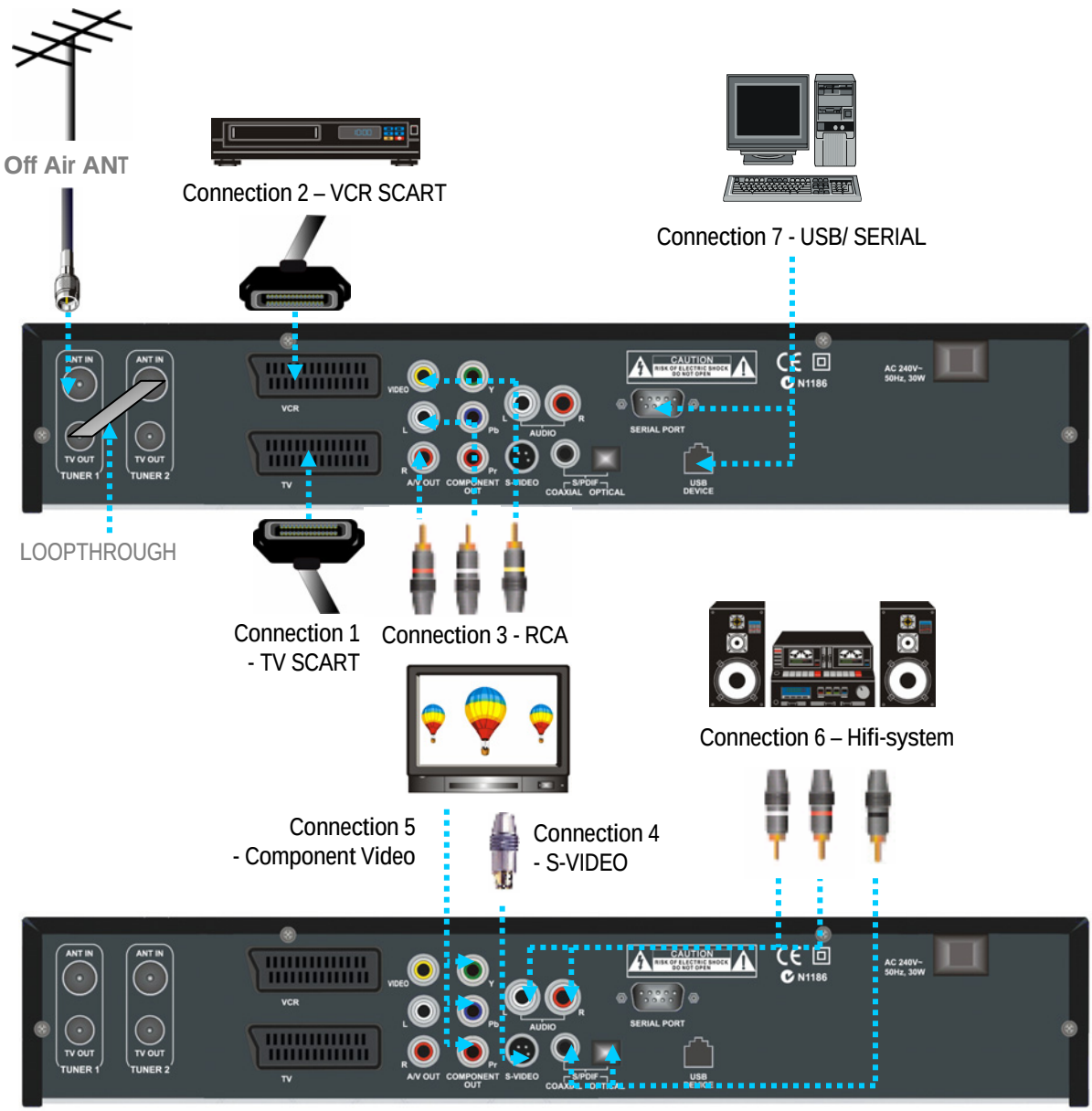
If you want to delete all files of PVR/ MP3/ Photo Album, select [ON] on a each parameter. Press the OK key on [Start].

4. Select [Yes] to confirm the HDD formation.

RECEIVER CONNECTIONS

◆ **It is possible to make different connections with the use of the SCART and RCA cables. Before making a connections with the cables, you should connect the ANT IN connector of the receiver to the cables from the terrestrial antenna.**

◆ **DO NOT PLUG the receiver into the Main Power Outlet, until you complete all connections to the receiver.**



RECEIVER CONNECTIONS

1. Connecting the television

- Plug the Euro-AV (Scart) cable supplied into the TV socket on the receiver and the corresponding Euro-AV socket (e.g. EURO-AV, SCART) on the television.

2. Connecting the VCR

- Plug a standard Euro-AV (Scart) cable into the VCR socket on the appliance and the Euro-AV socket (e.g. EURO-AV, LINE IN/OUT, EXT.1) on the video recorder.

3. Connecting an AV receiver

- Plug a standard cinch cable into the VIDEO and L R AUDIO sockets (left/right) on the receiver and the corresponding input sockets on the AV receiver.

4. Connecting a Super-Video interface

- Plug a Super-Video cable into the S-Video socket on the receiver and the corresponding S-Video socket on the television.

5. Connecting a Component Video of television

- Plug a Component Video cables into the component video sockets on the receiver and the corresponding component video sockets on the television.

6. Connecting a digital multi-channel amplifier

- Plug a standard S/PDIF cable into the S/PDIF socket (Coaxial / Optical) on the receiver and the corresponding socket on the digital multi-channel amplifier.

- Make sure the S/PDIF type which your amplifier supports between the Coaxial type and the Optical type before connecting the S/PDIF cable.

7. Connecting a data download port(USB/ SERIAL)

- Plug a data download cable into the data download port (USB / SERIAL) on the receiver and the corresponding download port on the PC.

QUICK SETUP GUIDE

1. Connect your television antenna to the TUNER 1 ANT IN input on the set top box.
2. Using the small Loopthrough cable provided, connect the TUNER 1 (TV OUT) to the TUNER2 (ANT IN).
3. Connect your set top box to your television using the RCA plugs provided (Yellow, Red, White).
4. Power on your set top box .
5. Select your Language settings & press the EXIT key.
6. Select the aspect ratio corresponding to your television (widescreen 16:9 or 4:3) & press the EXIT key.
7. Select your local time & press the EXIT key.
8. Make sure the search type is set to AUTO, scroll down to START.
9. Search & press the OK key . (Auto Search may take several minutes).
10. When the Auto Search is completed, press the OK key when prompted, then press the EXIT key to start viewing broadcasts.

SEARCH CHANNELS

When you start the receiver, it will switch to a guided introduction. Go through this introduction for the receiver according to the instructions supplied below.

- **Move the menu's cursor using the arrow buttons (◀, ▶, ▲ and ▼).**
- **Select or confirm the changes by pressing OK.**
- **Press MENU to go to the next setup menu.**

Language Settings

You can select the desired language for the Audio, Closed Caption and Teletext language.

1. Press the ◀,▶ keys to move to the desired language and press **OK** or use **OK** to open the language bar and use **OK** to select the language you would like.

2.Use the ▲,▼ keys to move to the next language settings.

Main Audio

It is used to select the main audio language for channels that have multiple audio languages.

Second Audio

It is used to select the second audio language for channels that have multiple audio languages. The second audio language is automatically selected by the receiver if the selected main audio language is not available.

Main Closed Caption

It is used to select the main closed caption language for channels that have multiple closed caption languages.

Second Subtitle

It is used to select the second closed caption language for channels that have multiple closed caption languages. The second closed caption language is automatically selected by the receiver if the selected main closed caption language is not available.

Teletext

It is used to select the OSG language of the teletext.

TV Output

Aspect Ratio

Here you can select the aspect ratio of the TV screen.

1. Use the ◀,▶ keys or select **OK** from the pull-down menu.

1) 4 : 3 for normal screen TVs

[Center]

[Letter Box]

2) 16: 9 for wide screen TVs

Contrast

You can adjust the screen brightness. The default value is 5.

0 : Darkest

10 : Brightest

Dolby Digital

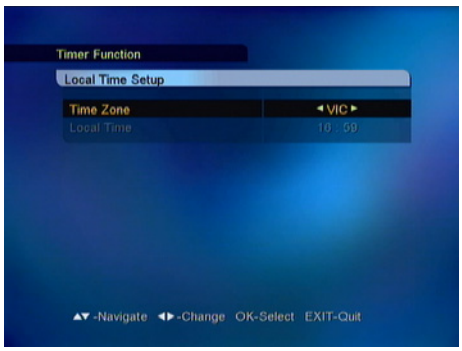
In order to enjoy Dolby Digital sound, select this feature by setting the parameter to [On]. Dolby Digital sound is not broadcast on all channels.

Note:

To enjoy Dolby Digital sound, you should first connect the optic cable from the S/PDIF connector to the amplifier on your home entertainment system.

Video Output

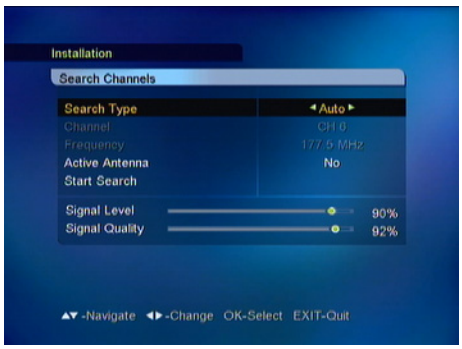
You can select the video output out of RGB (recommended) and Component.



Local Time Setup

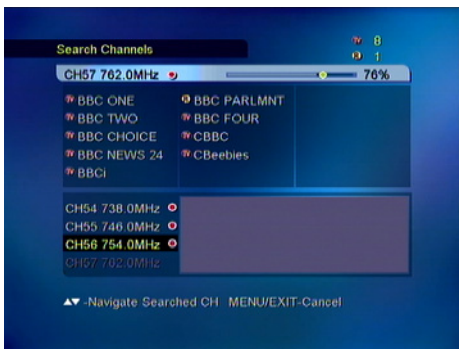
Here you can set the time according to location (time zone). The clock automatically resets itself to correspond to daylight savings time.

Select your time zone with the ◄,► keys or **OK** in the pull down menu.



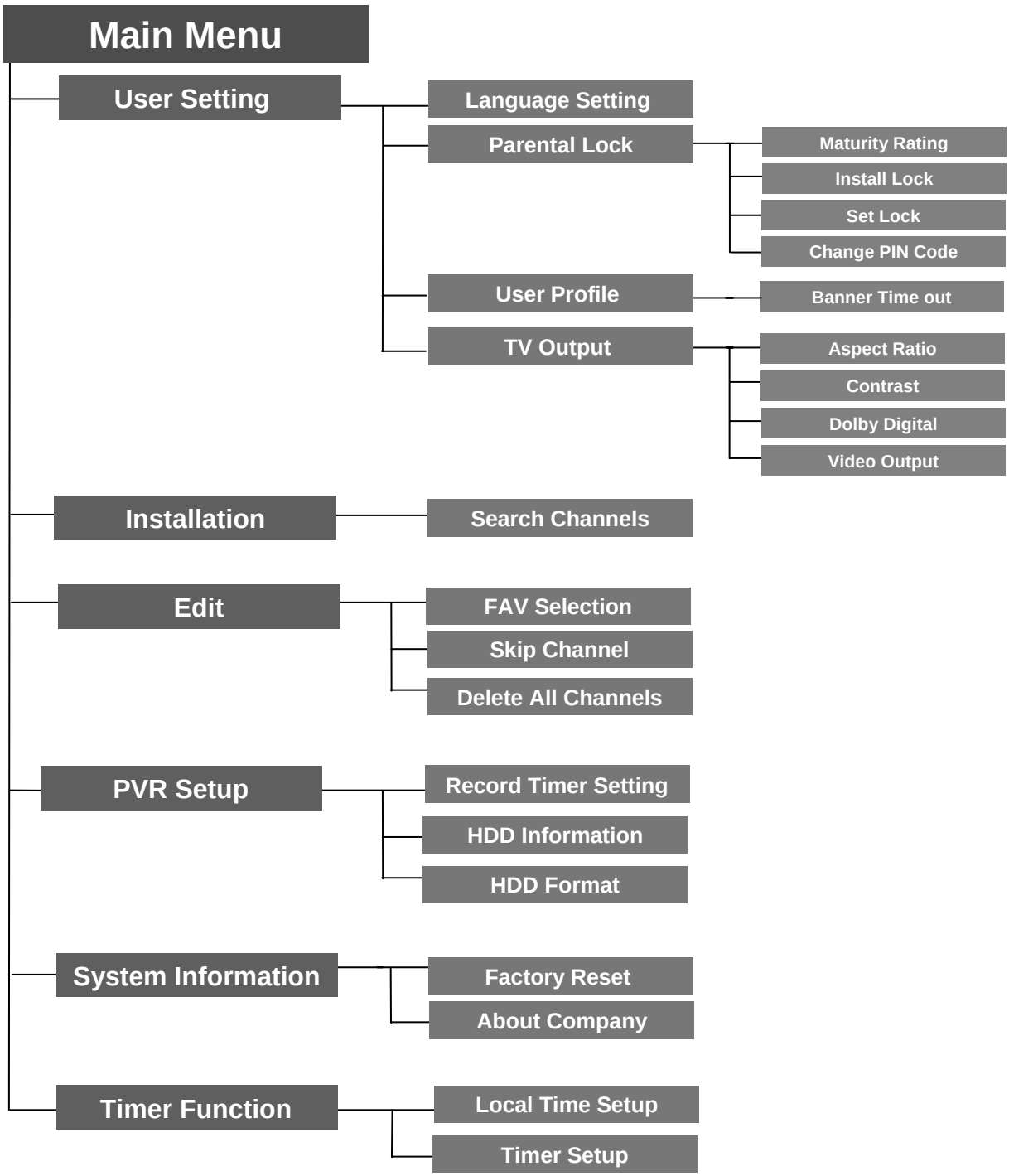
Search Channels

You can search channels automatically or manually.
- Choose either Auto or Manual on the Search Type.
-If you want to provide power for the antenna, select the Active Antenna [ON].
- Press the Start Search.

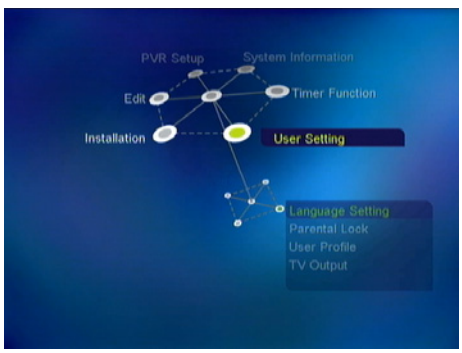


When the Channel Search is completed, a message box, 'Saving the Information', is displayed. Press the **OK** key if a message, 'Press the **OK** key to complete the search', is displayed.

While searching channels, you can find the status of the channel search and also channel name of TV or Radio.


Main Menu
User Setting
Language Setting
Parental Lock
Maturity Rating
Install Lock
Set Lock
Change PIN Code
User Profile
Banner Time out
TV Output
Aspect Ratio
Contrast
Dolby Digital
Video Output
Installation
Search Channels
Edit
FAV Selection
Skip Channel
Delete All Channels
PVR Setup
Record Timer Setting
HDD Information
HDD Format
System Information
Factory Reset
About Company
Timer Function
Local Time Setup
Timer Setup

- **Use the ◀,▶ keys (left, right) to move the cursor in the main menu.**
- **Use the ▲,▼ keys (up, down) to move in the submenu.**
- **Press OK to select or confirm the changes.**
- **Press MENU or EXIT to go to the upper level menu.**



The main menu consists of 6 submenus.

- User Setting
- Installation
- Edit
- PVR Setup
- System Information
- Timer Function

User Setting

Language Setting

You can select the desired language for the Audio, Closed Caption and Teletext language.

1. Press the ◀,▶ keys to move to the desired language and press **OK** or use **OK** from the pull down menu by pressing **OK** on the language bar which you want to set.

2. Use the ▲,▼ keys to move to the next language setting.

Main Audio

It is used to select the main audio language for channels that have multiple audio languages.

Second Audio

It is used to select the second audio language for channels that have multiple audio languages. The second audio language is automatically selected by the receiver if the selected main audio language is not available.

Main Closed Caption

It is used to select the main closed caption language for channels that have multiple closed caption languages.

Second Closed Caption

It is used to select the second closed caption language for channels that have multiple closed caption languages. The second closed caption language is automatically selected by the receiver if the selected main closed caption language is not available.

Teletext

It is used to select the OSG language of the teletext.

Parental Lock

With Parental Lock you can prevent watching TV channels you choose, listening a Radio channel, or an unauthorized change in the installation from being performed or the receiver setting from being changed.

To enter the Parental Lock menu, you have to enter the PIN code first.

The PIN code is set to **[0000]** at the factory.

The PIN code for the Parental Lock menu is the same as that of the program card's. See p. 33 to learn how to change your PIN code.

Maturity Rating

You can activate the receiver so that it requests a PIN code if the program is not suitable for viewers younger than the age limit you have set.

- Use the ◀,▶ keys to select the age.

Install Lock

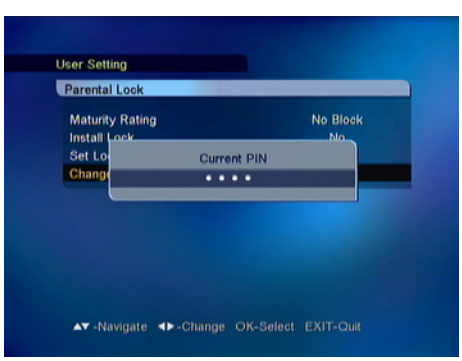
If the Installation Lock is set to [Yes], you have to enter the PIN code whenever you enter the Main menu.

- Use the ◀,▶ keys to select [Yes] or [No].

Set Lock

If the Set Lock is set to [Yes], the receiver will request that you enter your PIN code every time you start the receiver.

- Use the ◀,▶ keys to select [Yes] or [No].

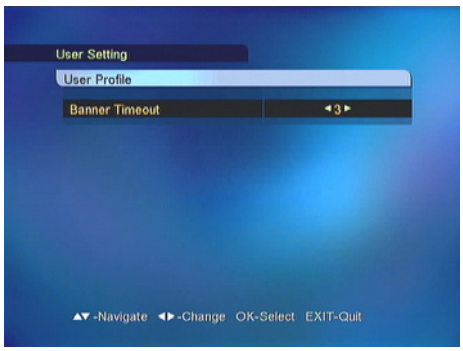


Change PIN Code

You can change the current PIN code to the new one.

(PIN – Personal Identification Number)

- Enter the current PIN code.
- Enter the new PIN code.
- Enter the new PIN code one more for verification.



User Profile

You can select the length of the timeout for the information banner (1-10 seconds).

1. Use the ◄,► keys or press OK in the pull down menu to select the banner timeout.

TV Output

Aspect Ratio

You can select the aspect ratio of the TV screen.

1. Use the ◄,► keys or press **OK** in the pull-down menu to select the aspect ratio.

1) 4 : 3 for normal screen TVs

[Center]

[Letter Box]

2) 16: 9 for wide screen TVs

Contrast

You can adjust the screen brightness. The default value is 5.

0 : Darkest

10 : Brightest

Dolby Digital

In order to listen Dolby Digital sound, select this feature by setting the parameter to [On]. Dolby Digital sound is not broadcast on all channels.

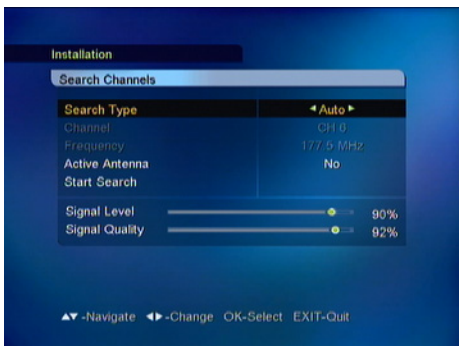
Note:

To listen Dolby Digital sound, you should first connect the optic cable from the S/PDIF connector to the amplifier on your home entertainment system.

Video Output

You can select the video output out of RGB (recommended) and Component.

Installation



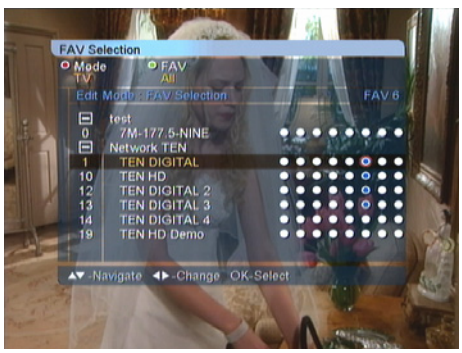
Search Channels

You can search channels automatically or manually.
- Choose either Auto or Manual on the Search Type.
-If you want to provide power for the antenna, select the Active Antenna [ON].
- Press the Start Search.

When the Channel Search is completed, a message box, 'Saving the Information', is displayed. Press the **OK** key if a message, 'Press the **OK** key to complete the search', is displayed.

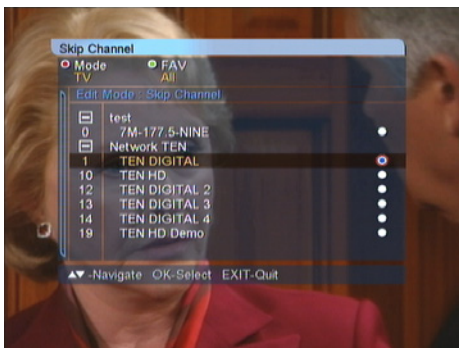
While searching channels, you can find the status of the channel search and also channel name of TV or Radio.

Edit



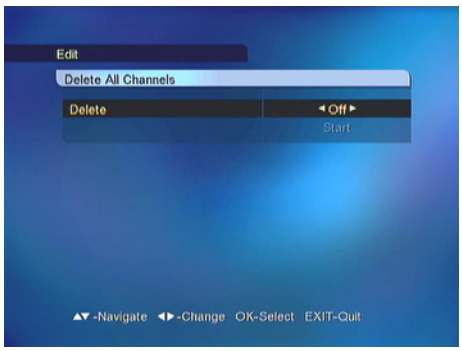
FAV Selection

If you choose the FAV selection mode, you can find the 8 options per each channel as left picture.
The left to right order of the 8 options means the FAV 1 to FAV 8 order.
- Press the **OK** key on the desired position(out of the 8 options) of the selected channel, then the selected position is the FAV group no.of the selected channel. For example, if you want to make a DWtv as a FAV 6 group, press the **OK** key on the 6th position of the DWtv channel.
- Press the **WHITE** key to exit the FAV selection mode.



Skip Channel

You can skip channel.
- Press the **OK** key on the channel you want to skip.
- For example, if you want to skip a DWtv, press the **OK** key on the DWtv channel.
- Press the **WHITE** key to exit the mode.



Delete All Channels

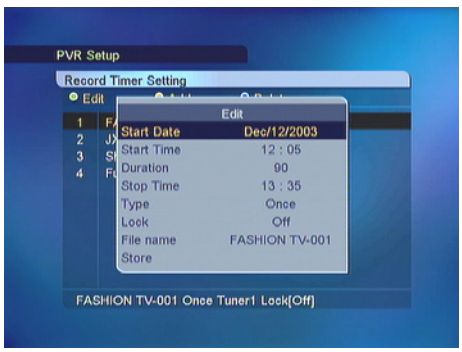
Here you can delete all of the channels in the Channel List. When you delete all the channels, the receiver's settings will stay the same and only the searched channels will be removed.

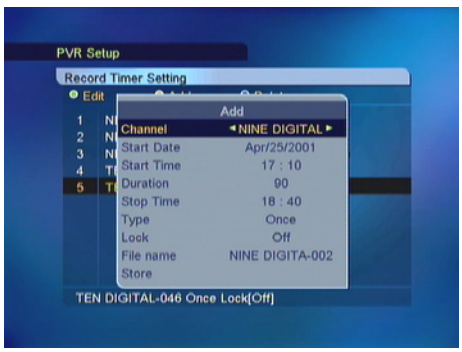
- Select On/Off with the ◀,▶ keys.
- Select [Start] and press **OK**.

Note> If you do the software upgrade of the receiver after having edited the Channel List or the Edit menu, the edited information can be initialized.

PVR Setup

Record Timer Setting





You can see the record list that has been set.

You can also edit, add and delete the set recordings.

The receiver's tuners (TUNER 1 and TUNER 2) should be connected with a loop-through so that the programs can be recorded.

Edit

1.Use the ▲,▼ keys to select the desired timer.

2.Press the **GREEN** key to display the timer information.

3.Use the number and ▲,▼ keys to edit the timer information.

4.Select [Store] and press **OK**

Add

You can add up to 20 Timers.

1.Press the **YELLOW** key to reserve a new timer.

2.Select the channel with the ◀,▶ keys.

3.Select the Start Date with the calendar.

4.Set the Start Time with the numeric keys.

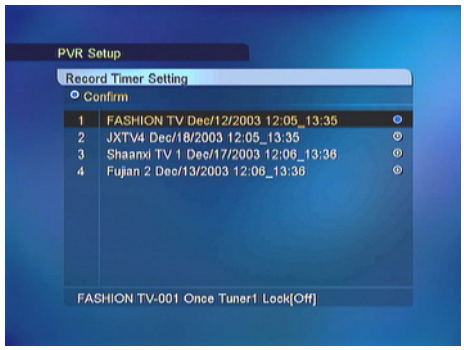
5.Set the Duration with the ◀,▶ keys.

6.Select the type with the ◀,▶ keys.

7.Set the file lock with the ◀,▶ keys.

8.If you want to edit the file name, press **OK** for the file name. Edit the name using the number and color keys.

9. Select [Store] and press OK.

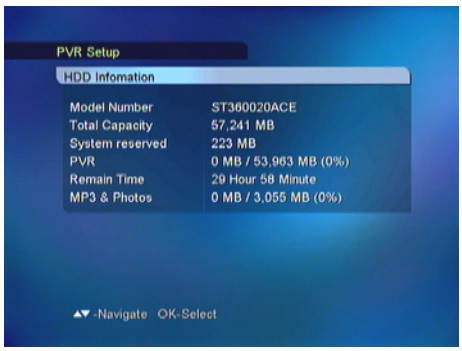


Delete

1.Press the **BLUE** key.

2.Use the ◀,▶ keys to move to the timer that you would like to delete and press **OK**. A blue mark will be displayed for the selected channel.

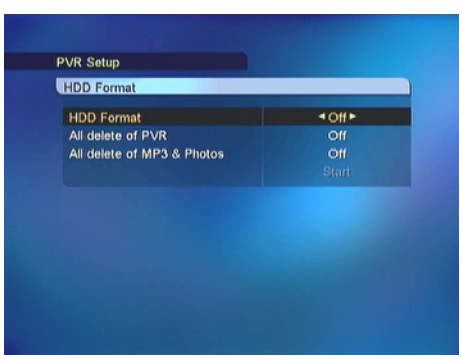
3.Once you have selected the timers to be deleted, press **EXIT**. Confirm the deletion by selecting [Yes] and pressing **OK**.


PVR Setup
HDD Infomation
Model Number ST360020ACE
Total Capacity 57,241 MB
System reserved 223 MB
PVR 0 MB / 53,963 MB (0%)
Remain Time 29 Hour 58 Minute
MP3 & Photos 0 MB / 3,055 MB (0%)
▲▼-Navigate OK-Select

HDD Information

Here you can find the HDD (Hard Disk Drive) information.

- Model number
- Total Capacity
- System reserved
- PVR Spacey
- Remaining Time
- MP3 and photo capacity



HDD Format

If you want to format the HDD (Hard Disk Drive), select [On] on the HDD format parameter.

1. If you want to delete all recorded files, select [On] on the All delete of PVR.

2. If you want to delete all MP3 and Photo albums, select [On] on the All delete of MP3 & Photos.

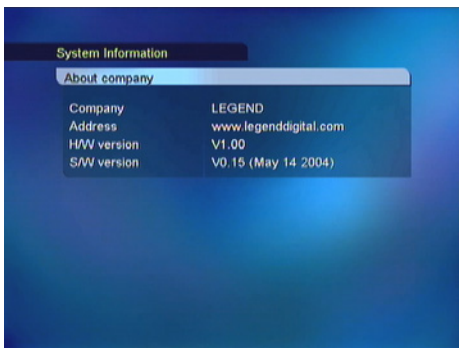
3. After setting each parameter, press **OK** on [Start].

System Information

Factory Reset

Here you can reset the receiver to its original settings. All changes made to the settings will be removed.
1.If you want to reset the receiver, select Yes and press **OK** under [Start].

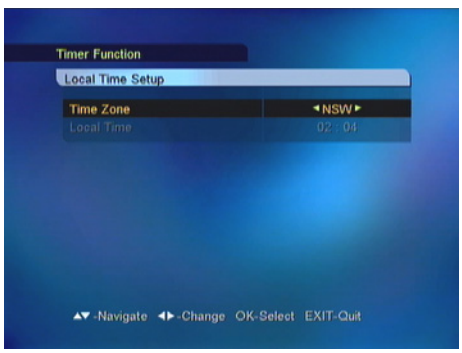
Upgrading the receiver software may also reset the channel list settings to their default values.



About Company

You can find the detailed information of the company and receiver version.

Timer Function



Local Time Setup

Here you can set the time according to location (time zone). The clock automatically resets itself to correspond to daylight savings time.

Select your time zone with the ◄,► keys or **OK** in the pull down menu.

Timer Setup

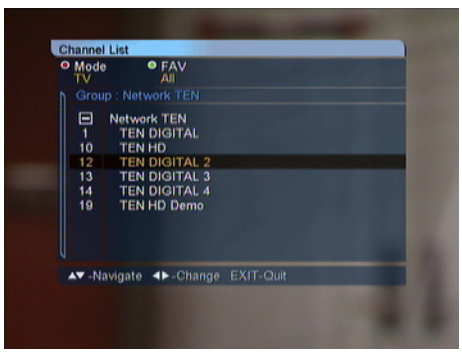
Here you can you can set the [Turn ON] or [Turn OFF] time for the timer.

In addition, you can set the [Sleep timer] on this menu.

1. Select ON/OFF with the ◄,► keys.
2. Set the time with the numeric keys.
3. Use the ◄,► keys to set the Sleep timer (15-180 minutes).

Press the OK key to display the channel list while you are watching a channel.

In this channel list, you can have several possibilities to format the present channel list according to your choice.
The formation is done by using the color keys on the RCU.



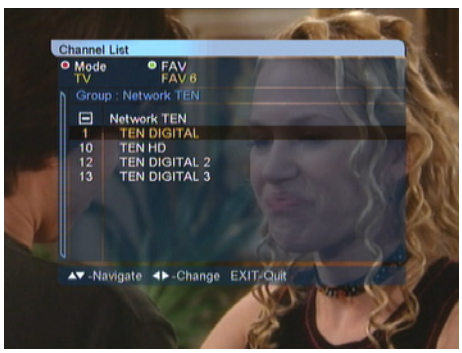
1) Mode Switch (RED key)
: TV / Radio
2) Favorite Group (GREEN key)
: FAV 1 Group ~ FAV 8 Group

Also you can move to a channel directly in this channel list menu.

When a color key is pressed, the pull down menu is shown with appropriate selections.

Note >

If you want to see the channel list directly while watching the channel, press the **OK** key on the RCU.



1) Mode Switch
- Press the **RED** key and select one mode out of TV/ Radio.

2) Favorite Group
Press the GREEN key and select one FAV group out of FAV 1 ~ FAV 8.

EPG

Additional information for each channel that has been provided by the suppliers can be read in the Electronic Program Guide (EPG).

If you want to see the EPG, press **EPG** on your remote control.

The channel list is displayed on the left side of the screen. The EPG window in the middle of the screen will show the programs of the channels as text banners. The bottom of the screen will show the date and time of each program.

- Use the ▲,▼ keys to switch the channel.
- Use the ◀,▶ keys to move within the channel.

Press **INFO** to view the start and end time, title and synopsis of the selected program. You can preview channels by pressing **OK**.

You can switch from the TV program guide to the Radio program guide by pressing the **RED** key on your remote control.

You can set the timer for the selected program. Select the program using the arrow keys and press **REC**. Verify the information and save the timer setting by selecting [Save] and press **OK**.

You can change the date and time interval of the EPG display with the color keys on the remote control:
GREEN: changes the date of the EPG display from the current to the previous day.
YELLOW: changes the date of the EPG display from current to the next day.
BLUE: switches the time interval of the EPG display to from 1.5 to 3 hours in 30-minute or 60-minute intervals.
RECALL: returns to the program being currently displayed in the EPG display.

Teletext

P100 100 ZDFtext Do 19.09.02 08:29:39
Mit dem Zweiten
sieht man besser
Irak: Stoiber warnt Bush 120
Opec berät über Ölförderung 124
Dschihad bekennt sich zu Anschlag 126
Babcock: Rettungsplan gefährdet? 135
Leverkusen geht in Piräus unter . 204
Bayern verlieren gegen La Coruna 205
CL: Alle Spiele am Mittwoch 207
05.30 ZDF-Morgenmagazin 361
09.00 heute
Inhalt (A-Z) 101 ZDF-Spendenaktion
Nachrichten 112 Kostenlose Hotline:
Sport 200 08 00/3 20 60 77
Programm ... 300 Spendenkonten ... 890
100 100 100 100

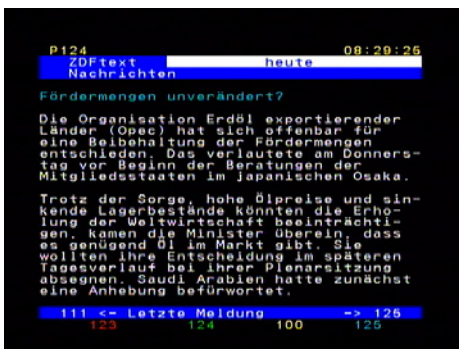
When you press the key on the RCU, the teletext information will be displayed.

- Use the ▲,▼ keys to move to the teletext which you want to see and press the **OK** key.

- When the teletext has sub pages, use the P- , P+ keys to move to the sub pages.

P-: moves to the previous page

P+: moves to the next page


P124 08:29:25
ZDFtext heute
Nachrichten
Fördermengen unverändert?
Die Organisation Erdöl exportierender Länder (Opec) hat sich offenbar für eine Beibehaltung der Fördermengen entschieden. Das verlautete am Donnerstag vor Beginn der Beratungen der Mitgliedsstaaten im japanischen Osaka.
Trotz der Sorge, hohe Ölpreise und sinkende Lagerbestände könnten die Erholung der Weltwirtschaft beeinträchtigen, kamen die Minister überein, dass es genügend Öl im Markt gibt. Sie wollten ihre Entscheidung im späteren Tagesverlauf bei ihrer Plenarsitzung absegnen. Saudi Arabien hatte zunächst eine Anhebung befürwortet.
111 <- Letzte Meldung -> 125
123 124 100 125

The recording functions of the receiver:

Normal recording
Timed recording
Time shifting
Watching another channel while recording/time shifting
Simultaneous recording and time-shifting
Playing back a recorded program while recording/time shifting
Use of the Photo Album and MP3 mode while recording

PVR LIST

Press **PVR** to obtain a list of the recordings.

There are 3 modes in the PVR list: PVR (recorded programs), MP3 mode (MP3 files) and Photo Album (saved/recorded pictures).

To select a mode in the PVR list, press the **RED** key and select that mode.

HELP MENU

The functions available in different modes (PVR, MP3 and Photo Album) are listed in the Help Menu.

If you would like to view the Help Menu, press **INFO** in the info banner mode.

HOW TO RECORD

Live Signal mode

1.If you want to record a current viewing channel, press the **RECORD** key on the RCU.

2.Then, the record banner is displayed on the left top.

The record banner shows the file name/ duration and recording time.

(The default duration time is set as 60min.)

3. After the record banner disappears, the diamond banner is displayed on the right top.

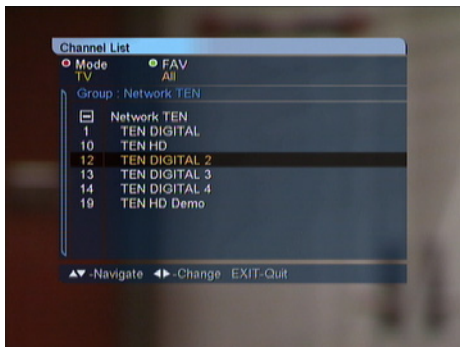
The diamond banner shows the information of current mode.

If you press the **EXIT** key, the diamond banner will disappear.

4. Once the recording has started, the upper left-hand corner will have the recording information displayed in it for approximately 5 seconds. If necessary, you can change the recording information (e.g., length and name) by pressing **REC**.

Once the recording information has left the screen, the diamond symbol that is visible in the upper right-hand corner (3 seconds) shows the receiver's mode.

5. To stop recording, press **STOP**.



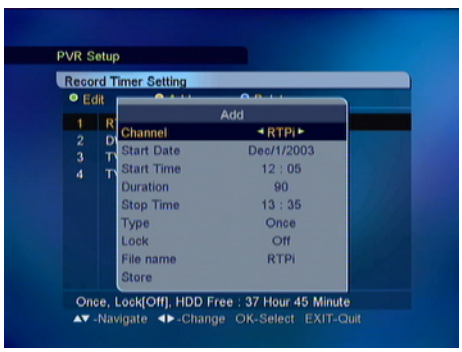
Channel List mode

Recordings can also be started directly from the channel list.

- Press **OK** to display the channel list.
- Select a channel and press **RECORD**.

The default length of the recording is 16 hours. If necessary, you can adjust the length of the recording in the menu that opens when you press **REC**.

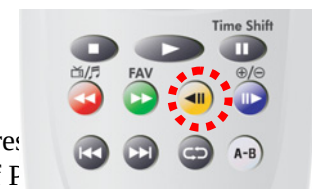
- Press **STOP** to stop the recording.



Record Timer Setting

You can reserve 20 Timers for recording. Select PVR Set-up | Record Timer Setting from the main menu.

Press the **YELLOW** key (more) to set the time for a new recording.



You can re in the Record Timer Setting of P

1.Go to the Record Timer Setting of PVR setup menu.

- Select the Channel with the the ◄,► keys.

2.Press the **YELLOW** key to reserve a new channel.

- Set the Start Date with the calendar.
- Set the Start Time with the numeric keys.
- Select the duration with the the ◄,► keys.

When you select the length of the recording, the Stop Time will be automatically set.

- Select the Type of the recording: Once/Daily/Weekly. The recording will repeat according to this type.

- If you want to rename the file name, select [Recording Name] and press **OK**. Edit the name using the alphabet and color keys.

- Once each parameter has been set, select [Store] and press **OK**.

EPG mode

You can set the time for recordings straight from the EPG. You can set a maximum of 20 timing settings.

Open the EPG by pressing **EPG**.

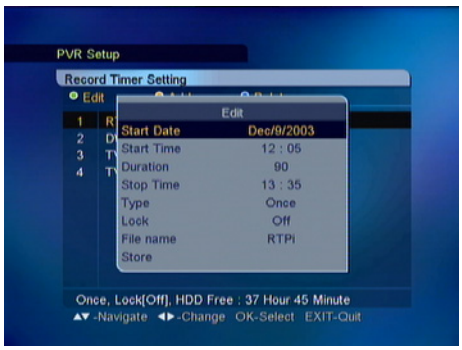
You can reserve up to 20 Timers.

- Select a channel with the ◀,▶ keys

- Select a program to be recorded from the channel with the ▲,▼ keys.

- Press **REC**

- If you cancel the recording reservation, Press **REC** once again.



The information will be automatically determined according to the program information.

NOTE! The programs may start or end later than expected. If necessary, adjust the length of the recording to ensure that the entire program is recorded.

If you want edit timer settings that have been set at a later date, go to the Reserved Record List in the PVR Setup menu (see p. 43).

The functions of the recording mode:

Index

It is possible to set bookmarks in a recorded file while it is being recorded.

- Press INDEX to set the bookmark while recording.

Interrupting a recording

It is possible to temporarily interrupt a recording.

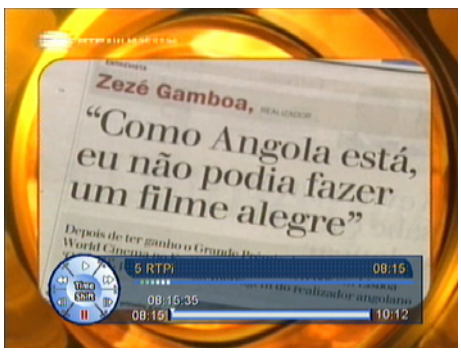
- Press PAUSE while recording, then press PAUSE again to continue the recording.

Current Record Setup menu

If you press RECORD while a recording is in progress, you can view the its information.

In the menu that is displayed, you can edit the length and name of the recording.

TIME SHIFTING



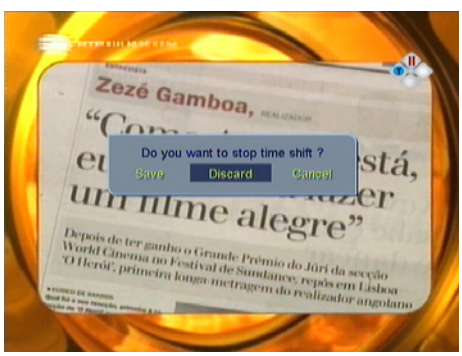
Time shifting enables you to pause the live signal and then continue watching the live signal from where the program was paused.

- If you want to time-shift a program, press **TIME SHIFTING** while watching the live signal.

The receiver displays the frozen picture and starts recording the live signal on the HDD.

The live signal can be time-shifted for up to 90 or so minutes.

- When you would like to continue watching the program, press **PAUSE** or **PLAY**.

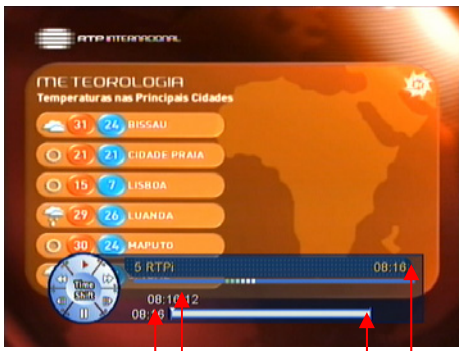

Zezé Gamboa,
Do you want to stop time shift ?
Save
Discard
Cancel
Depois de ter ganho o Grande Prémio do Júri da secção World Cinema no Festival de Sundance, repôs em Lisboa "O Herói", primeira longa-metragem do realizador angolano

The program will continue to be recorded to the HDD until the 90-minute block is full or time-shifting has been stopped. If you would like to stop time-shifting the program, press **STOP**. A message will be displayed on the screen requesting that you confirm your selection.

- If you want to save the time-shifted program as a file, select [Save].

- If you do not want to save the program, select [Discard].

- If you do not want to stop time-shifting, select [Cancel].



Start time of the recording

Current timepoint

End time of the recording

Clock

You can watch the program that has been saved during time-shifting from any point during the program you would like.

While time-shifting, the following functions are available:

- Play
- Slow Forward/ Slow Reverse
- FF/ REW
- Pause
- Jump Forward/ Jump Reverse (15-second intervals)

It is possible to simultaneously use time-shifting and normal recording.

HOW TO PLAY RECORDINGS

Select a file from the PVR list

- Press **PVR** to open the recorded file list.

- Select the recorded file you want to play and press **OK**. When it starts to play, the PVR info banner will be displayed on the screen.
- If you do not want the recording to play anymore, press **STOP**.
- If you want to play some other file, press **OK** to display the PVR list. Select the file that you would like to play.

Fast Forward & Fast Reverse

While you are watching the recorded file, you can fast forward at various speeds (2x, 4x, 6x, 8x). Press **FAST FORWARD** or **FAST REVERSE** as follows:

Press once – 2 times the playback speed
Press twice – 4 times the playback speed
Press third – 6 times the playback speed
Press fourth – 8 times the playback speed

Jump Forward and Jump Reverse

Within a recorded program, you can jump approximately 15 seconds forward and back (reverse).
1. Press **JUMP FORWARD** to go forward by 15 seconds.
2. Press **JUMP REVERSE** to go reverse by 15 seconds.

Direct access

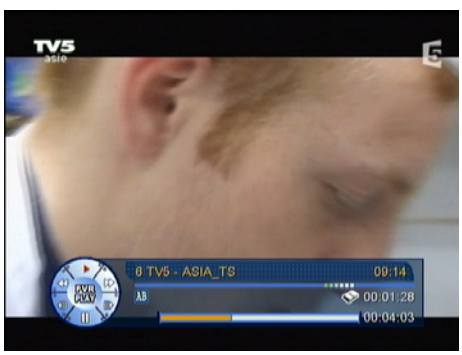
It is possible to go directly to the scene which you would like to play.
- Press and hold **JUMP FORWARD/REVERSE** and keep an eye on the movement of the cursor in the time bar. Let go of the key once you have reached the scene you would like to play. The recording will start to play from this scene.

Repeat

A recorded program can be reset to replay from the beginning once the program is over.

- Press **REPEAT** while playing the recorded file. The arrow symbol on the PVR info bar indicates that the repeat mode has been activated.

- Press **REPEAT** again to deactivate the repeat mode.



Repeat A-B

If you want to repeat the current playing recorded file between A and B section, use this function.

- Press **REPEAT A-B** while playing the recorded file to set “A”, the start point of the loop.

- Press **REPEAT A-B** again to set “B”, the end point of the loop. The receiver will play the section of the recording between “A” and “B”.
- Press **REPEAT A-B** a third time to deactivate this mode. The “A” and “B” symbols will be removed from the time bar.

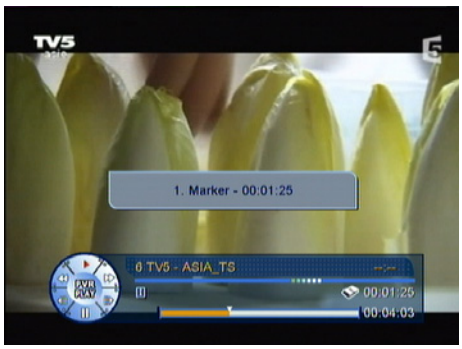
NOTE> You can edit the recorded file in the REPEAT A-B mode.

If you press the **OK** key after selecting the repeating section, a message will be displayed on the screen requesting that you confirm your selection.
-If you want to save the selected section as another file name, select [Save].
-If you want to delete the selected section from the recorded file, select [Cut].
-If you do not want to edit the recorded file, select [Cancel].

Slow Motion

You can play the recorded file in slow motion.
- Press **SLOW FORWARD** while playing the recording. The recording can be viewed at 1/2x, 1/4x, 1/6x and 1/8x slower than the normal speed.

- Press **SLOW REVERSE** to play the recorded program in slow motion in reverse. The recording can be viewed at 1/2x, 1/4x, 1/6x and 1/8x slower than the normal speed.



Marker

It is possible to set bookmarks in a recorded file while it is being recorded. The bookmarks can be used to find the scene you would like to watch from the recording. The bookmarks can be set while recording the program as well as while watching it. Ten bookmarks can be set.

- Press **MARKER** to set the bookmark while recording or watching the program.

- If you want to see the marker info submenu while you are watching a recorded file, press **MARKER LIST**.

- Use the arrow keys to select the bookmark and press **OK**.

- Press the **RED** key to delete the selected bookmark. Confirm your selection and leave the menu by pressing **EXIT**.

Frame by Frame

It is possible to watch a recorded program one frame at a time.

- Press **PAUSE** while playing the recording.

- Press **PAUSE** again to display the next frame. Every time you press **PAUSE** again, a new frame will be displayed.
- Press **PLAY** to be able to watch the recording in normal mode.

Playback while Recording

It is possible to playback a file being recorded while it is being recorded or a file that has already been recorded.

Playing a program while it is being recorded.

- Press **PVR** to display the PVR list on the screen.

- Select the program from the list that is currently being recorded (the name of the program is written in red) and press **PLAY**.

Playing a program that has already been recorded.

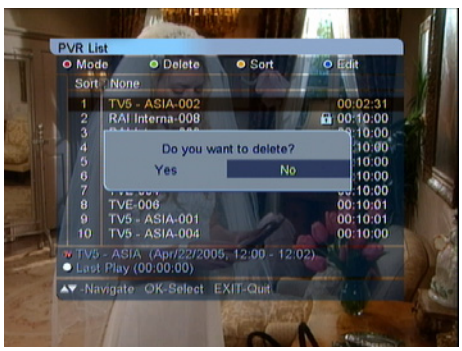
- Press **PVR** to display the PVR list on the screen.

- Select the program from the list and press **OK** or **PLAY**.

- If you want to stop playing the recording, press **STOP** once.

- If you want to stop an on-going recording, press **STOP** once more time. Confirm this by selecting [Yes] and pressing **OK**.

PVR List



Delete

You can Delete the sort the selected recording.

1. Press the **GREEN** key to delete the selected recording.

Sort (A to Z/ Date/Size)

You can sort the PVR list according to A to Z, Date and Size.

1. Press the **YELLOW** key and select the sort mode.

Edit (Delete/Rename/Lock)

1. Press the **BLUE** key to select the edit mode.

1) Delete (removing recordings)

-Press **OK** for all selected recordings which you want to delete and then press **EXIT** to confirm.

2) Rename (changing the name of a recording)

-Press **OK** for a selected recording. You can rename the recording using the number and alphabet keys in the menu that is displayed.

3) Lock (locking recordings)

- Select the program to be locked and then press **OK**. Press **EXIT** to confirm the locking.

Last Play

You can continue watching the recorded program from the scene that you stopped watching it at. Press the **WHITE** key to start replaying it.

Photo Album

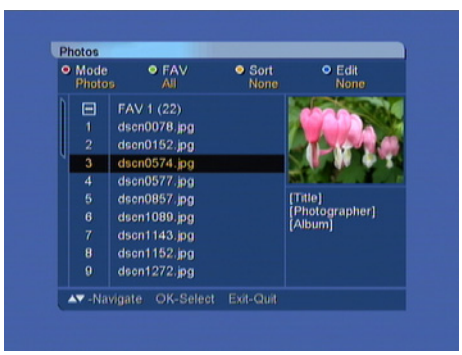
Photo files are downloaded from your computer to the receiver via the USB port. First, connect the USB cable from your computer to the receiver and then install the USB driver and transfer program. Follow the instructions that are displayed on the screen of your computer.
You can find the download driver and program on the Legend website. (www.legenddigital.com)

To enter Photo album mode,

1. Press **PVR**.
2. Press the **RED** key and select Photos.

Note!

4,000 photos (3 GB shared with the photo album) can be stored in the photo album. Up to 500 photos can be stored in one FAV list. When you are viewing photos, press **INFO** to obtain the menu functions.
Press **STOP** to exit the photo album.



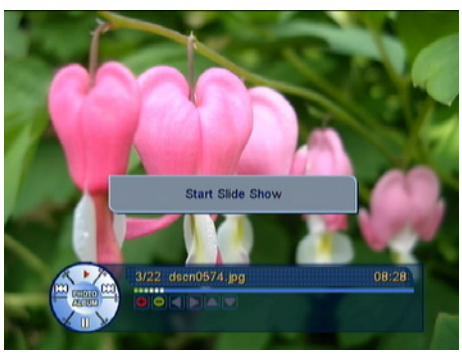
Play Photo Album

Display a selected Photo

- Use the arrow keys to select a photo from the list and press **OK**. Once you have viewed the photo, you can reinsert it in the list by pressing **OK**.

You can see the next photo by pressing **NEXT**.

-You can see the previous photo by pressing **PREVIOUS**.

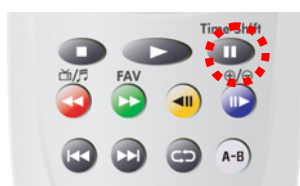


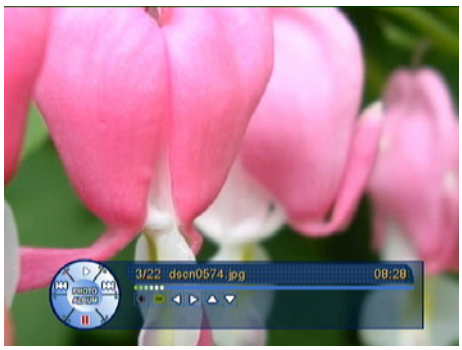
Start a slide show

It is possible to view the photos that have been saved on the HDD as a slide show. The photos on the screen change every three seconds.

-Select the first photo on the list and press **OK**. Press **PLAY** to start the show. To return to the list after the show, press **OK**.

- To interrupt the slide show, press **PAUSE**. Restart the show by pressing **PLAY**.



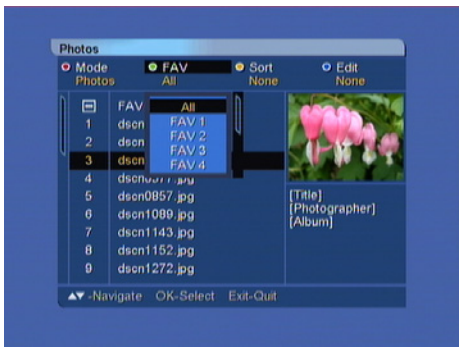


Zoom IN/OUT

1. Press **ZOOM IN** to enlarge the selected picture.

Use the arrow keys to move in the enlarged photo.

Reduce the photo by pressing **ZOOM OUT** for a selected picture.



Favorite lists, sorting and editing

Favorite lists (FAV lists)

You can divide your photos up into favorite lists, of which there can be 8.

- To select your favorite list, press the **GREEN** key and select the list you would like using the arrow keys. Confirm the selection by pressing **OK**.

It is possible to rename FAV lists.

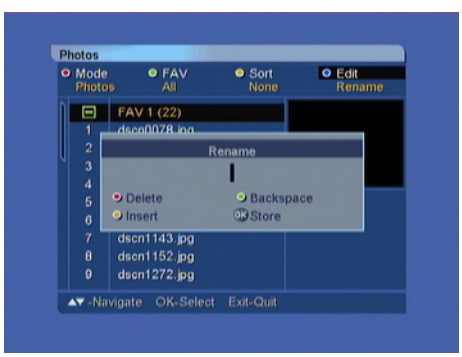
- Press the **GREEN** key and select [All].

- Press the **BLUE** key and select [Rename].

- Move the cursor so that it is on top of the title of the favorite list (FAV 1 - FAB 8) and press **OK**.

- Rename the FAV list using the number and alphabet keys. Save the new name by pressing **OK**.

- To exit [Rename], press **EXIT**.



To move photos from one FAV list to another:

- Press the **BLUE** key and select [FAV Move]. Eight options that depict the FAV lists (FAV 1 - FAB 8) will be displayed for each photo. Use the arrow keys to select a new FAV list for the photo and press **OK**. Confirm the changes and exit by pressing **EXIT**.

Sort

You can sort your photo album in alphabetical order or by title of the photo, photographer or album.

- Press the **YELLOW** key and select the sort mode.

Edit

Photo albums can be edited in three ways:

- Press the **BLUE** key and then select the edit mode.
  - •Rename
  - •Delete
  - •Move FAV

Rename

The name of the photo can be changed.

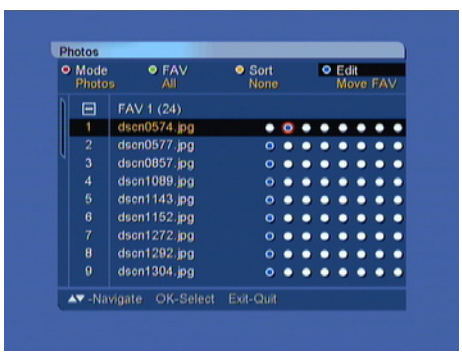
- Use the arrow keys to select a photo that you would like to rename and press **OK**. Rename the photo using the number and alphabet keys and press **OK** to save the changes. To exit [Rename] mode, press **EXIT**.

Delete

Removal of photos from a list.

- Select the photo to be deleted using the arrow keys and press **OK**. A blue symbol will appear next to the photo.

- To remove the selected picture(s), press **EXIT**. Confirm the deletion by selecting [Yes] and pressing **OK**.



Move FAV

When you select the Move FAV mode, the menu screen is switched with 8 dots on a photo list .

- Press the **OK** key on target FAV dot.

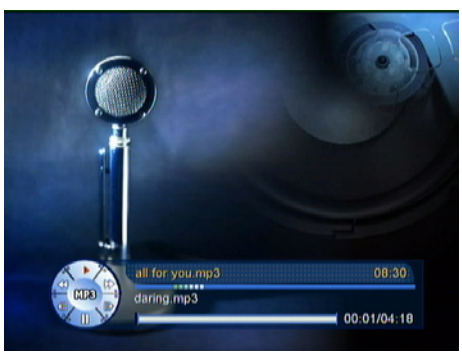
MP3

MP3 files are downloaded from your computer to the receiver via the USB port. First, connect the USB cable from your computer to the receiver and then install the USB driver and transfer program. Follow the instructions that are displayed on the screen of your computer.
You can find the download driver and program on the Legend website. (www.legenddigital.com)

To enter MP3 mode,
1. Press **PVR**.
2. Press the **RED** key and select the MP3.

Note!

4,000 MP3s (3 GB shared with the photo album) can be stored in the MP3 list. Up to 500 files can be stored in one FAV list. When you are listening to a file, press **INFO** to obtain the menu functions. Press **STOP** to return to exit the MP3 player.



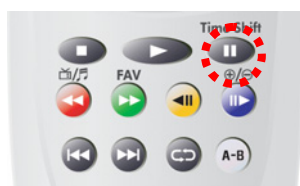
Playing MP3 Files

- Use the arrow keys to select an MP3 and press **OK**. Once you are listening to the MP3, you can redisplay the MP3 list by pressing **OK**.

-Press **JUMP FORWARD** to jump 10 seconds ahead.

-Press **JUMP REVERSE** to jump 10 seconds back.

-To temporarily interrupt the MP3, press **PAUSE**.
Press **PLAY** to continue listening to the file.



-Press **NEXT** to play the next file.

Press **PREVIOUS** to play the previous file.

Press **FAST FORWARD** or **FAST REVERSE** to move to the point that you would like to play.

It is possible to place two time markers (A and B) in the file to be played so that the section between A and B will be played in a continuous loop.

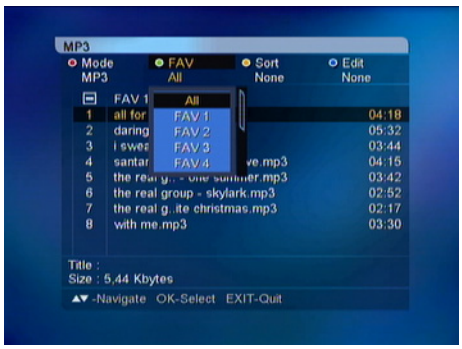
-Press **REPEAT A-B** to set the start point of the loop.

-Press **REPEAT A-B** again to set “B”, the end point of the loop.
-Press **REPEAT A-B** a third time to listen to the file in normal mode.

REPEAT

A recorded program can be reset to replay from the beginning once the program is over.

-Press **REPEAT** while playing the recorded file. The arrow symbol on the PVR info bar indicates that the repeat mode has been activated.



Favorite lists, sorting and editing

Favorite lists (FAV lists)

You can divide your MP3s up into favorite lists, of which there can be 8.

- To select your favorite list, press the **GREEN** key and select the list you would like using the arrow keys. Confirm the selection by pressing **OK**.

It is possible to rename FAV lists.

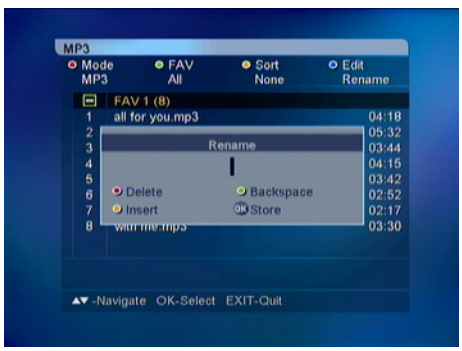
- Press the **GREEN** key and select [All].

- Press the **BLUE** key and select [Rename].

- Move the cursor so that it is on top of the title of the favorite list (FAV 1 - FAB 8) and press **OK**.

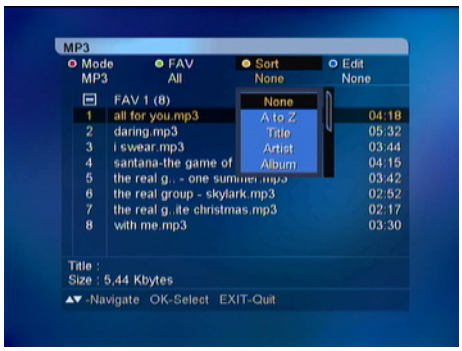
- Rename the FAV list using the number and alphabet keys. Save the new name by pressing **OK**.

- To exit [Rename], press **EXIT**.



To move photos from one FAV list to another:

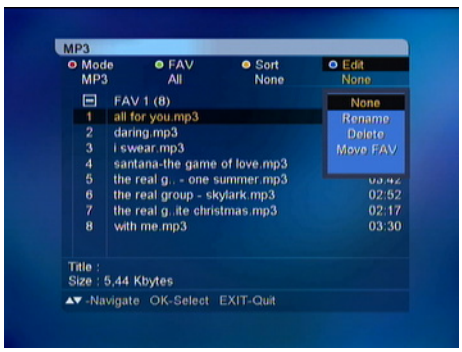
- Press the **BLUE** key and select [FAV Move]. Eight options that depict the FAV lists (FAV 1 - FAB 8) will be displayed for each file. Use the arrow keys to select a new FAV list for the file and press **OK**. Confirm the changes and exit by pressing **EXIT**.



Sort

You can sort your MP3 list in alphabetical order or by title of the photo, photographer or album.

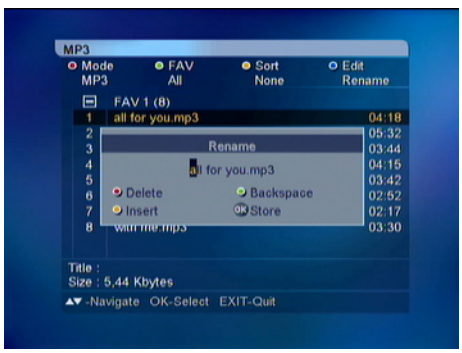
- Press the **YELLOW** key and select the sort mode.



Edit

MP3 lists can be edited in three ways:

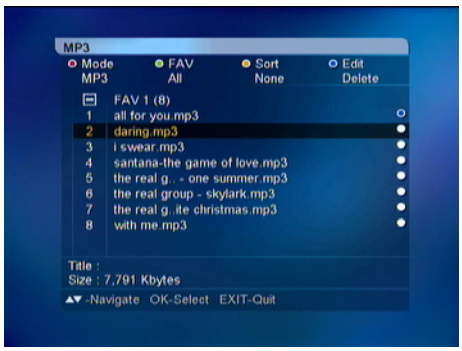
- Press the **BLUE** key and then select the edit mode.
  - •Rename
  - •Delete
  - •Move FAV



Rename

The name of the file can be changed.

- Use the arrow keys to select a file that you would like to rename and press **OK**. Rename the file using the number and alphabet keys and press **OK** to save the changes. To exit [Rename] mode, press **EXIT**.

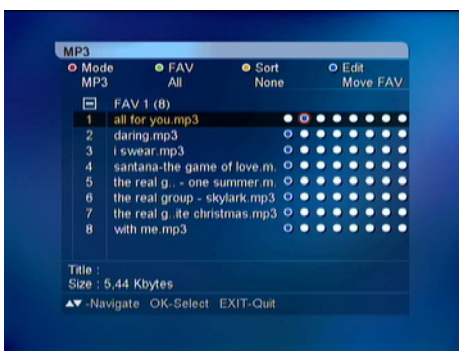


Delete

Removal of MP3 files from a list.

- Select the file to be deleted using the arrow keys and press **OK**. A blue symbol will appear next to the file.

- To remove the selected file(s), press **EXIT**. Confirm the deletion by selecting [Yes] and pressing **OK**.



Move FAV

When you select the Move FAV mode, the menu screen is switched with 8 dots on a MP3 list .

- Press the **OK** key on target FAV dot.

Problem	Possible cause	Solution to the problem
You have forgotten your PIN code.		Contact your authorized service company or the customer service of your network operator.
The recording failed.	The loop-through has not been installed or the HDD is full.	Install the loop-through. Remove files from the HDD.
No display LED on the front panel / No power supply	Power cord not plugged in correctly.	Plug in the power cord correctly.
No picture on the screen.	Receiver in Standby mode	Set the receiver to [ON]
	AV Output not tightly connected to the TV's video output	Connect the connector correctly.
	Incorrect input channel selected on the TV.	Turn it to the right channel.
No Sound	Audio cord connected incorrectly. Volume level is 0. Mute active.	Check connection and correct. Increase volume on the TV set. Press MUTE.
Remote Control does not control the receiver.	Incorrect usage Batteries dead or inserted incorrectly.	Point remote control towards the receiver. Replace batteries or insert them correctly.
Poor picture quality.	Signal strength too low.	Check the signal strength in the [Installation] menu, check the cable signal from the cable network.
Software upgrading does not automatically start once the receiver has been turned on again.		Choose [Factory 1] in [Software upgrade] menu and choose [Start].
The smartcard is not working.	The smartcard is not installed properly.	Check that the smartcard has been correctly inserted.

1. Tuner & Channel

RF Input Connector	IEC type, Female x 2
RF Output Connector	IEC type, male x 2
Input Frequency Range	VHF : 174~230MHz UHF : 470 ~ 860MHz
Input Signal Level	-78dBm ~ -15dBm
OFDM-Demod IC	CX22702(produced by Conexant)
Input Impedance	75 Ohm
ANT Input Return Loss	6dB typ.
Channel Band width	7MHz typ.
Spurious Signals at Input Terminal	46dBu max. (50-950MHz) 54dBu max. (950-1750MHz)

2. MPEG transport stream A/V decoding

Transport stream	MPEG-2 ISO/IEC 13818 Transport stream specification
Profile & level	MPEG-2 MP @ ML
Input T/S data rate	80Mbit/S max.
Aspect ratio	4:3(Center, Letter Box), 16:9
Video resolution	720 x 576 (PAL), 720 x 480 (NTSC)
Audio decoding	MPEG audio layer 1 & 2, musicam
Audio mode	Stereo, dual channel, joint stereo, mono
Sampling rate	32, 44.1 and 48kHz

3. Memory

Flash memory	2M bytes (Default 2M bytes)
Program DRAM	16M bytes
EEPROM	2K bytes

4. A/V & Data in/out

S-Video out	Mini DIN x 1
CVBS video out	RCA x 1
S/PDIF	Coaxial x 1, Optical x 1
Analog audio out	RCA x 2 (L-CH x 1, R-CH x 1) Resolution 16bit DAC Output Level 2Vrms Max Volume & Mute control
Data interface	RS232C, Baud Rate 9600 ~ 115200, 9 Pin D-Sub

5. RF-Modulator

RF-connect	75Ohm, IEC169-2, Male/Female
Output channel	CH 28 ~ 69
TV standard	PAL B/B

5. RF-Modulator

RF-connect	75Ohm, IEC169-2, Male/Female
Output channel	CH 28 ～ 69
TV standard	PAL B/B

6. Recording Options

Pause time (Time Shifting)	about 60min Max.

7. USB interface

Connector Type	Serial B
USB Driver	Ver 1.1
Data Rate	12Mbps Max.

8. Storage

Interface	IDE
Protocol	ATA-5
Data Read/Write	DMA mode 2

9. Key Functions

Pause	Supported
Record	Instant record
Fast forward/reverse	Multiple rate
Slow motion forward/reverse	Multiple rate
Frame by Frame	Supported
Random search	Supported
Instant replay	Supported

10. Power Supply

Input voltage	AC 240V~, 50Hz
Type	SMPS
Power consumption	30W max. (Below 7W max. for stand-by mode)
Protection	Separate internal fuse and chassis grounding and the input shall have lighting or electric shock protection.

11. Physical Specifications

Size (W x H x D)	370mm x 60mm x 280mm
Weight	about 3.0 Kg

12. Environment

Operating temperature	+5 ℃ ～+40 ℃
Storage temperature	-40 ℃ ～+65 ℃